

REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Serafin Ortiz MSH 1H
Field	Marshall	API	47051025080000
Facility	Serafin Ortiz MSH Pad	Wellbore	Serafin Ortiz MSH 1H AWB
Slot	1H		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 17 North, US feet	Software System	WellArchitect® 6.0
North Reference	Grid	User	Tranlam
Scale	0.999608	Report Generated	5/13/2024 at 10:40:37 AM
Convergence at slot	0.19° East	Database	WA_MPL_EASTERNUS_Defn

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.09	0.92	1722433.65	14523474.62	39°59'26.4504"N	80°42'25.8319"W
Facility Reference Pt			1722432.73	14523474.53	39°59'26.4495"N	80°42'25.8437"W
Field Reference Pt			0.00	0.00	0°00'0.0000"	85°29'19.4780"W

WELLPATH DATUM			
Calculation method	Minimum curvature	SDC 40 (KB) to Facility Vertical Datum	1305.18ft
Horizontal Reference Pt	Slot	SDC 40 (KB) to Mean Sea Level	1305.18ft
Vertical Reference Pt	SDC 40 (KB)	SDC 40 (KB) to Ground Level at Slot (1H)	26.00ft
MD Reference Pt	SDC 40 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	337.93°

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WELLPATH DATA (235 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
0.00†	0.000	256.630	0.00	0.00	0.00	0.00	1722433.65	14523474.62	39°59'26.4504"N	80°42'25.8319"W	0.00	0.000	0.00
26.00	0.000	256.630	26.00	0.00	0.00	0.00	1722433.65	14523474.62	39°59'26.4504"N	80°42'25.8319"W	0.00	0.000	0.00
177.00	0.140	256.630	177.00	0.03	-0.04	-0.18	1722433.47	14523474.58	39°59'26.4499"N	80°42'25.8342"W	0.18	256.630	0.09
237.00	0.090	64.820	237.00	0.04	-0.04	-0.21	1722433.44	14523474.58	39°59'26.4500"N	80°42'25.8345"W	0.21	259.239	0.38
328.00	0.290	175.200	328.00	-0.17	-0.24	-0.12	1722433.53	14523474.38	39°59'26.4480"N	80°42'25.8335"W	0.27	207.495	0.37
418.00	0.130	151.420	418.00	-0.49	-0.56	-0.06	1722433.59	14523474.06	39°59'26.4449"N	80°42'25.8326"W	0.56	185.789	0.20
511.00	0.150	159.650	511.00	-0.72	-0.76	0.04	1722433.69	14523473.86	39°59'26.4428"N	80°42'25.8314"W	0.76	177.257	0.03
602.00	0.290	224.130	602.00	-0.93	-1.04	-0.08	1722433.57	14523473.58	39°59'26.4401"N	80°42'25.8330"W	1.04	184.535	0.29
693.00	0.260	244.300	693.00	-1.04	-1.29	-0.43	1722433.22	14523473.33	39°59'26.4376"N	80°42'25.8374"W	1.36	198.336	0.11
770.00	0.280	227.470	770.00	-1.11	-1.50	-0.72	1722432.93	14523473.12	39°59'26.4356"N	80°42'25.8412"W	1.66	205.840	0.11
875.00	0.340	231.280	874.99	-1.29	-1.87	-1.16	1722432.49	14523472.76	39°59'26.4320"N	80°42'25.8468"W	2.19	211.813	0.06
967.00	0.430	225.740	966.99	-1.50	-2.28	-1.62	1722432.03	14523472.34	39°59'26.4279"N	80°42'25.8527"W	2.79	215.387	0.11
1058.00	0.520	222.200	1057.99	-1.81	-2.82	-2.14	1722431.51	14523471.80	39°59'26.4225"N	80°42'25.8595"W	3.54	217.173	0.10
1148.00	0.600	215.540	1147.99	-2.24	-3.51	-2.69	1722430.96	14523471.11	39°59'26.4158"N	80°42'25.8665"W	4.42	217.463	0.11
1240.00	0.820	209.840	1239.98	-2.90	-4.47	-3.29	1722430.36	14523470.15	39°59'26.4063"N	80°42'25.8744"W	5.55	216.395	0.25
1332.00	0.960	203.800	1331.97	-3.85	-5.75	-3.93	1722429.72	14523468.88	39°59'26.3937"N	80°42'25.8826"W	6.96	214.394	0.18
1423.00	1.130	220.900	1422.95	-4.79	-7.12	-4.83	1722428.82	14523467.50	39°59'26.3801"N	80°42'25.8942"W	8.60	214.137	0.39
1514.00	1.460	226.970	1513.93	-5.61	-8.59	-6.26	1722427.39	14523466.03	39°59'26.3657"N	80°42'25.9127"W	10.63	216.095	0.39
1604.00	1.910	226.600	1603.89	-6.56	-10.40	-8.19	1722425.46	14523464.22	39°59'26.3478"N	80°42'25.9376"W	13.24	218.214	0.50
1695.00	3.040	230.010	1694.80	-7.86	-13.00	-11.14	1722422.51	14523461.63	39°59'26.3223"N	80°42'25.9756"W	17.12	220.606	1.25
1785.00	4.980	230.070	1784.58	-9.79	-17.04	-15.97	1722417.69	14523457.59	39°59'26.2825"N	80°42'26.0377"W	23.35	223.140	2.16
1881.00	8.130	230.090	1879.94	-13.15	-24.07	-24.37	1722409.29	14523450.56	39°59'26.2133"N	80°42'26.1460"W	34.25	225.356	3.28
1974.00	9.950	230.510	1971.78	-17.57	-33.40	-35.62	1722398.05	14523441.23	39°59'26.1215"N	80°42'26.2909"W	48.83	226.840	1.96
2064.00	11.030	230.080	2060.27	-22.54	-43.87	-48.22	1722385.45	14523430.77	39°59'26.0184"N	80°42'26.4532"W	65.19	227.705	1.20
2157.00	12.710	228.400	2151.28	-28.68	-56.37	-62.70	1722370.98	14523418.27	39°59'25.8953"N	80°42'26.6397"W	84.31	228.040	1.84
2249.00	14.590	227.870	2240.68	-36.04	-70.87	-78.86	1722354.82	14523403.78	39°59'25.7526"N	80°42'26.8480"W	106.02	228.056	2.05
2339.00	16.090	228.640	2327.47	-44.05	-86.71	-96.63	1722337.06	14523387.94	39°59'25.5966"N	80°42'27.0770"W	129.83	228.096	1.68
2443.00	16.690	226.980	2427.25	-54.15	-106.42	-118.36	1722315.33	14523368.24	39°59'25.4025"N	80°42'27.3571"W	159.17	228.040	0.73
2534.00	19.280	224.030	2513.79	-64.91	-126.14	-138.36	1722295.34	14523348.53	39°59'25.2083"N	80°42'27.6148"W	187.23	227.645	3.02
2625.00	20.790	222.560	2599.28	-77.92	-148.84	-159.73	1722273.98	14523325.84	39°59'24.9846"N	80°42'27.8903"W	218.33	227.021	1.75

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WELLPATH DATA (235 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
2715.00	21.120	220.400	2683.33	-92.26	-172.96	-181.04	1722252.68	14523301.73	39°59'24.7470"N	80°42'28.1651"W	250.38	226.308	0.93
2805.00	21.980	222.150	2767.04	-107.08	-197.79	-202.85	1722230.88	14523276.91	39°59'24.5023"N	80°42'28.4464"W	283.32	225.724	1.19
2896.00	20.270	225.110	2851.93	-120.60	-221.54	-225.45	1722208.29	14523253.16	39°59'24.2683"N	80°42'28.7378"W	316.09	225.501	2.21
2986.00	19.290	223.930	2936.61	-132.69	-243.25	-246.81	1722186.94	14523231.46	39°59'24.0545"N	80°42'29.0131"W	346.54	225.416	1.18
3077.00	18.710	222.250	3022.66	-145.13	-264.88	-267.05	1722166.70	14523209.84	39°59'23.8414"N	80°42'29.2741"W	376.14	225.234	0.88
3167.00	19.080	223.890	3107.81	-157.38	-286.17	-286.96	1722146.81	14523188.56	39°59'23.6316"N	80°42'29.5307"W	405.26	225.079	0.72
3259.00	19.320	223.440	3194.69	-169.81	-308.06	-307.85	1722125.93	14523166.68	39°59'23.4160"N	80°42'29.8000"W	435.51	224.980	0.31
3349.00	19.810	225.810	3279.50	-181.73	-329.50	-329.02	1722104.76	14523145.25	39°59'23.2048"N	80°42'30.0729"W	465.64	224.958	1.04
3444.00	19.920	225.140	3368.84	-194.06	-352.13	-352.03	1722081.76	14523122.63	39°59'22.9819"N	80°42'30.3695"W	497.92	224.992	0.27
3535.00	20.310	226.040	3454.29	-205.95	-374.03	-374.39	1722059.41	14523100.74	39°59'22.7662"N	80°42'30.6577"W	529.21	225.027	0.55
3625.00	20.220	224.120	3538.72	-218.05	-396.04	-396.46	1722037.35	14523078.74	39°59'22.5494"N	80°42'30.9422"W	560.38	225.030	0.75
3716.00	19.820	225.040	3624.22	-230.40	-418.23	-418.32	1722015.49	14523056.55	39°59'22.3308"N	80°42'31.2240"W	591.53	225.006	0.56
3806.00	19.530	224.430	3708.97	-242.34	-439.75	-439.65	1721994.17	14523035.04	39°59'22.1188"N	80°42'31.4989"W	621.83	224.993	0.39
3897.00	18.190	219.290	3795.09	-255.21	-461.61	-459.30	1721974.53	14523013.19	39°59'21.9034"N	80°42'31.7522"W	651.18	224.856	2.34
3988.00	18.380	221.250	3881.49	-268.46	-483.39	-477.75	1721956.09	14522991.42	39°59'21.6888"N	80°42'31.9902"W	679.64	224.664	0.71
4078.00	20.360	225.140	3966.40	-280.90	-505.11	-498.21	1721935.64	14522969.71	39°59'21.4749"N	80°42'32.2539"W	709.47	224.606	2.62
4169.00	20.140	225.970	4051.77	-292.89	-527.16	-520.69	1721913.16	14522947.67	39°59'21.2576"N	80°42'32.5437"W	740.96	224.646	0.40
4259.00	20.300	226.230	4136.23	-304.46	-548.73	-543.11	1721890.76	14522926.11	39°59'21.0452"N	80°42'32.8326"W	772.06	224.705	0.20
4351.00	20.000	223.000	4222.60	-316.99	-571.28	-565.36	1721868.51	14522903.57	39°59'20.8231"N	80°42'33.1195"W	803.74	224.702	1.25
4446.00	18.430	223.570	4312.30	-330.03	-594.04	-586.79	1721847.09	14522880.81	39°59'20.5989"N	80°42'33.3958"W	834.99	224.648	1.66
4537.00	21.240	226.750	4397.90	-341.92	-615.76	-608.72	1721825.17	14522859.10	39°59'20.3849"N	80°42'33.6784"W	865.85	224.670	3.31
4627.00	22.230	224.840	4481.50	-354.49	-639.01	-632.60	1721801.30	14522835.87	39°59'20.1560"N	80°42'33.9861"W	899.17	224.711	1.35
4718.00	20.650	220.030	4566.21	-368.75	-663.50	-655.06	1721778.85	14522811.38	39°59'19.9146"N	80°42'34.2757"W	932.38	224.633	2.60
4808.00	20.200	219.900	4650.55	-383.48	-687.57	-675.23	1721758.68	14522787.32	39°59'19.6774"N	80°42'34.5359"W	963.69	224.481	0.50
4899.00	21.990	224.250	4735.45	-397.71	-711.83	-697.20	1721736.72	14522763.07	39°59'19.4383"N	80°42'34.8192"W	996.39	224.405	2.61
4990.00	20.920	222.540	4820.15	-411.52	-736.01	-720.08	1721713.86	14522738.90	39°59'19.2002"N	80°42'35.1141"W	1029.67	224.373	1.36
5082.00	21.190	226.370	4906.01	-424.67	-759.58	-743.22	1721690.72	14522715.33	39°59'18.9679"N	80°42'35.4124"W	1062.71	224.376	1.52
5173.00	21.340	230.820	4990.82	-435.59	-781.39	-767.96	1721665.99	14522693.53	39°59'18.7532"N	80°42'35.7311"W	1095.60	224.503	1.78
5264.00	21.470	232.940	5075.54	-444.76	-801.89	-794.08	1721639.88	14522673.04	39°59'18.5515"N	80°42'36.0676"W	1128.54	224.720	0.86
5355.00	20.610	232.040	5160.47	-453.46	-821.78	-820.00	1721613.97	14522653.16	39°59'18.3558"N	80°42'36.4014"W	1160.92	224.938	1.01

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5446.00	18.900	230.280	5246.12	-462.31	-841.05	-843.97	1721590.01	14522633.90	39°59'18.1661"N	80°42'36.7101"W	1191.49	225.099	1.99
5548.00	16.990	227.470	5343.15	-472.53	-861.68	-867.66	1721566.33	14522613.28	39°59'17.9630"N	80°42'37.0154"W	1222.84	225.198	2.06
5640.00	19.210	234.340	5430.60	-480.79	-879.60	-889.87	1721544.13	14522595.37	39°59'17.7866"N	80°42'37.3014"W	1251.22	225.333	3.34
5730.00	18.490	246.800	5515.81	-484.55	-893.86	-915.03	1721518.99	14522581.11	39°59'17.6465"N	80°42'37.6252"W	1279.16	225.670	4.54
5831.00	21.280	262.360	5610.85	-480.30	-902.61	-947.94	1721486.08	14522572.36	39°59'17.5611"N	80°42'38.0485"W	1308.93	226.403	5.90
5927.00	23.720	272.820	5699.57	-467.82	-903.98	-984.51	1721449.53	14522571.00	39°59'17.5487"N	80°42'38.5184"W	1336.58	227.442	4.87
6024.00	27.920	289.300	5786.98	-444.56	-895.50	-1025.50	1721408.55	14522579.47	39°59'17.6339"N	80°42'39.0447"W	1361.46	228.872	8.54
6120.00	32.220	298.440	5870.08	-409.92	-875.86	-1069.26	1721364.81	14522599.10	39°59'17.8293"N	80°42'39.6060"W	1382.19	230.678	6.53
6217.00	37.390	305.650	5949.74	-365.01	-846.35	-1115.98	1721318.11	14522628.60	39°59'18.1225"N	80°42'40.2051"W	1400.62	232.824	6.80
6314.00	43.420	311.410	6023.59	-310.22	-807.08	-1164.98	1721269.13	14522667.85	39°59'18.5121"N	80°42'40.8329"W	1417.24	235.286	7.31
6410.00	50.460	316.470	6089.12	-246.14	-758.35	-1215.30	1721218.83	14522716.57	39°59'18.9953"N	80°42'41.4773"W	1432.50	238.036	8.28
6507.00	55.690	321.100	6147.39	-172.91	-699.99	-1266.27	1721167.88	14522774.90	39°59'19.5736"N	80°42'42.1298"W	1446.87	241.066	6.60
6604.00	61.720	324.990	6197.77	-92.84	-633.75	-1315.99	1721118.18	14522841.12	39°59'20.2298"N	80°42'42.7658"W	1460.64	244.286	7.10
6700.00	69.850	329.310	6237.13	-6.92	-560.23	-1363.34	1721070.85	14522914.61	39°59'20.9579"N	80°42'43.3711"W	1473.96	247.661	9.41
6797.00	77.560	334.980	6264.34	85.61	-477.97	-1406.71	1721027.50	14522996.84	39°59'21.7722"N	80°42'43.9248"W	1485.69	251.233	9.73
6893.00	85.810	339.500	6278.22	180.49	-390.46	-1443.38	1720990.84	14523084.32	39°59'22.6382"N	80°42'44.3923"W	1495.26	254.863	9.77
6990.00	90.520	340.050	6281.33	277.36	-299.51	-1476.88	1720957.35	14523175.23	39°59'23.5380"N	80°42'44.8190"W	1506.95	258.536	4.89
7086.00	90.680	339.500	6280.32	373.30	-209.44	-1510.07	1720924.17	14523265.27	39°59'24.4292"N	80°42'45.2417"W	1524.53	262.104	0.60
7183.00	91.510	338.900	6278.47	470.26	-118.78	-1544.51	1720889.75	14523355.89	39°59'25.3262"N	80°42'45.6804"W	1549.07	265.602	1.06
7279.00	90.550	337.670	6276.74	566.24	-29.61	-1580.02	1720854.25	14523445.03	39°59'26.2086"N	80°42'46.1329"W	1580.30	268.927	1.63
7376.00	90.650	337.530	6275.73	663.23	60.07	-1616.98	1720817.30	14523534.67	39°59'27.0960"N	80°42'46.6041"W	1618.10	272.128	0.18
7473.00	90.340	337.530	6274.89	760.23	149.70	-1654.06	1720780.25	14523624.26	39°59'27.9829"N	80°42'47.0767"W	1660.82	275.172	0.32
7569.00	90.590	337.690	6274.11	856.22	238.46	-1690.62	1720743.70	14523712.99	39°59'28.8612"N	80°42'47.5428"W	1707.36	278.029	0.31
7665.00	90.710	338.010	6273.02	952.22	327.37	-1726.81	1720707.52	14523801.86	39°59'29.7410"N	80°42'48.0042"W	1757.57	280.735	0.36
7762.00	90.770	338.430	6271.77	1049.21	417.44	-1762.80	1720671.54	14523891.89	39°59'30.6322"N	80°42'48.4628"W	1811.55	283.322	0.44
7859.00	90.680	338.130	6270.54	1146.20	507.55	-1798.70	1720635.66	14523981.97	39°59'31.5238"N	80°42'48.9203"W	1868.93	285.758	0.32
7955.00	90.400	337.070	6269.64	1242.19	596.30	-1835.28	1720599.10	14524070.68	39°59'32.4020"N	80°42'49.3866"W	1929.72	287.999	1.14
8051.00	90.580	337.670	6268.82	1338.18	684.90	-1872.21	1720562.17	14524159.25	39°59'33.2788"N	80°42'49.8575"W	1993.56	290.094	0.65
8147.00	90.340	336.930	6268.04	1434.17	773.46	-1909.26	1720525.14	14524247.78	39°59'34.1552"N	80°42'50.3298"W	2059.98	292.053	0.81
8244.00	90.710	337.830	6267.16	1531.16	863.00	-1946.57	1720487.85	14524337.28	39°59'35.0412"N	80°42'50.8055"W	2129.29	293.910	1.00

REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	Serafin Ortiz MSH 1H
Field	Marshall	API	47051025080000
Facility	Serafin Ortiz MSH Pad	Wellbore	Serafin Ortiz MSH 1H AWB
Slot	1H		

WELLPATH DATA (235 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
8340.00	90.460	337.780	6266.18	1627.16	951.88	-1982.83	1720451.60	14524426.12	39°59'35.9207"N	80°42'51.2677"W	2199.47	295.644	0.27
8436.00	90.800	338.080	6265.12	1723.15	1040.84	-2018.90	1720415.55	14524515.05	39°59'36.8009"N	80°42'51.7275"W	2271.41	297.273	0.47
8533.00	90.520	337.600	6264.00	1820.14	1130.67	-2055.48	1720378.98	14524604.84	39°59'37.6898"N	80°42'52.1938"W	2345.94	298.814	0.57
8629.00	90.400	338.580	6263.23	1916.14	1219.73	-2091.30	1720343.17	14524693.87	39°59'38.5711"N	80°42'52.6504"W	2421.01	300.252	1.03
8726.00	90.000	337.630	6262.89	2013.14	1309.73	-2127.47	1720307.01	14524783.83	39°59'39.4616"N	80°42'53.1115"W	2498.31	301.618	1.06
8822.00	90.370	337.280	6262.58	2109.13	1398.39	-2164.28	1720270.22	14524872.46	39°59'40.3390"N	80°42'53.5807"W	2576.75	302.867	0.53
8919.00	90.710	341.730	6261.67	2206.07	1489.23	-2198.23	1720236.28	14524963.26	39°59'41.2377"N	80°42'54.0132"W	2655.19	304.116	4.60
9015.00	90.430	337.160	6260.71	2302.00	1579.09	-2231.93	1720202.60	14525053.08	39°59'42.1268"N	80°42'54.4425"W	2734.05	305.279	4.77
9112.00	90.770	340.150	6259.70	2398.98	1669.42	-2267.23	1720167.31	14525143.38	39°59'43.0206"N	80°42'54.8923"W	2815.54	306.365	3.10
9209.00	90.370	336.220	6258.73	2495.95	1759.45	-2303.27	1720131.29	14525233.37	39°59'43.9114"N	80°42'55.3517"W	2898.40	307.376	4.07
9305.00	90.060	338.300	6258.37	2591.94	1847.98	-2340.37	1720094.20	14525321.87	39°59'44.7875"N	80°42'55.8248"W	2982.01	308.295	2.19
9402.00	89.600	337.810	6258.66	2688.94	1937.95	-2376.62	1720057.96	14525411.81	39°59'45.6778"N	80°42'56.2869"W	3066.59	309.195	0.69
9499.00	89.540	337.800	6259.39	2785.94	2027.76	-2413.27	1720021.34	14525501.58	39°59'46.5665"N	80°42'56.7540"W	3152.09	310.039	0.06
9595.00	89.720	337.650	6260.01	2881.93	2116.59	-2449.65	1719984.96	14525590.38	39°59'47.4455"N	80°42'57.2179"W	3237.40	310.828	0.24
9691.00	90.150	337.960	6260.12	2977.93	2205.48	-2485.92	1719948.71	14525679.23	39°59'48.3250"N	80°42'57.6803"W	3323.24	311.579	0.55
9788.00	90.060	338.090	6259.94	3074.93	2295.43	-2522.22	1719912.43	14525769.15	39°59'49.2151"N	80°42'58.1430"W	3410.37	312.305	0.16
9884.00	90.340	342.650	6259.60	3170.82	2385.83	-2554.46	1719880.20	14525859.51	39°59'50.1094"N	80°42'58.5535"W	3495.35	313.045	4.76
9981.00	90.920	338.600	6258.54	3267.69	2477.31	-2586.63	1719848.04	14525950.95	39°59'51.0145"N	80°42'58.9632"W	3581.58	313.763	4.22
10078.00	91.200	338.610	6256.74	3364.66	2567.61	-2622.01	1719812.68	14526041.22	39°59'51.9080"N	80°42'59.4141"W	3669.82	314.399	0.29
10174.00	90.830	337.700	6255.04	3460.64	2656.70	-2657.72	1719776.97	14526130.28	39°59'52.7895"N	80°42'59.8693"W	3757.87	314.989	1.02
10271.00	90.830	335.960	6253.64	3557.61	2745.87	-2695.88	1719738.83	14526219.40	39°59'53.6719"N	80°43'0.3560"W	3848.06	315.526	1.79
10367.00	91.020	338.280	6252.09	3653.58	2834.30	-2733.20	1719701.53	14526307.80	39°59'54.5469"N	80°43'0.8319"W	3937.46	316.040	2.42
10464.00	90.950	338.120	6250.42	3750.57	2924.35	-2769.22	1719665.52	14526397.81	39°59'55.4379"N	80°43'1.2911"W	4027.45	316.561	0.18
10560.00	90.800	338.000	6248.95	3846.56	3013.38	-2805.08	1719629.67	14526486.81	39°59'56.3190"N	80°43'1.7483"W	4116.91	317.050	0.20
10657.00	90.680	337.550	6247.70	3943.55	3103.17	-2841.77	1719593.00	14526576.56	39°59'57.2074"N	80°43'2.2160"W	4207.77	317.518	0.48
10753.00	90.860	335.540	6246.41	4039.51	3191.22	-2879.98	1719554.81	14526664.58	39°59'58.0788"N	80°43'2.7033"W	4298.62	317.935	2.10
10849.00	90.890	336.160	6244.94	4135.43	3278.81	-2919.25	1719515.55	14526752.14	39°59'58.9456"N	80°43'3.2044"W	4390.06	318.320	0.65
10946.00	90.860	336.860	6243.46	4232.39	3367.76	-2957.91	1719476.91	14526841.05	39°59'59.8258"N	80°43'3.6975"W	4482.30	318.707	0.72
11043.00	90.920	337.970	6241.96	4329.37	3457.31	-2995.15	1719439.68	14526930.57	40°00'0.7119"N	80°43'4.1725"W	4574.27	319.097	1.15
11139.00	90.990	338.180	6240.36	4425.36	3546.35	-3030.99	1719403.85	14527019.58	40°00'1.5930"N	80°43'4.6294"W	4665.14	319.480	0.23

REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	Serafin Ortiz MSH 1H
Field	Marshall	API	47051025080000
Facility	Serafin Ortiz MSH Pad	Wellbore	Serafin Ortiz MSH 1H AWB
Slot	1H		

WELLPATH DATA (235 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
11236.00	90.950	337.880	6238.71	4522.35	3636.30	-3067.28	1719367.58	14527109.48	40°00'2.4830"N	80°43'5.0920"W	4757.19	319.852	0.31
11332.00	90.990	338.000	6237.09	4618.33	3725.26	-3103.33	1719331.55	14527198.41	40°00'3.3632"N	80°43'5.5516"W	4848.52	320.204	0.13
11429.00	90.860	337.880	6235.52	4715.32	3815.14	-3139.75	1719295.13	14527288.26	40°00'4.2527"N	80°43'6.0160"W	4940.99	320.547	0.18
11525.00	90.920	338.110	6234.03	4811.31	3904.14	-3175.72	1719259.18	14527377.22	40°00'5.1333"N	80°43'6.4746"W	5032.64	320.874	0.25
11622.00	91.020	338.040	6232.39	4908.29	3994.11	-3211.93	1719222.98	14527467.16	40°00'6.0235"N	80°43'6.9363"W	5125.37	321.195	0.13
11719.00	90.710	337.270	6230.92	5005.28	4083.82	-3248.81	1719186.12	14527556.83	40°00'6.9112"N	80°43'7.4064"W	5218.46	321.497	0.86
11815.00	91.140	338.640	6229.37	5101.27	4172.78	-3284.83	1719150.11	14527645.76	40°00'7.7915"N	80°43'7.8658"W	5310.58	321.790	1.50
11912.00	90.860	338.070	6227.68	5198.25	4262.93	-3320.61	1719114.35	14527735.87	40°00'8.6834"N	80°43'8.3218"W	5403.61	322.083	0.65
12008.00	91.140	333.670	6226.01	5294.15	4350.51	-3359.84	1719075.14	14527823.41	40°00'9.5501"N	80°43'8.8224"W	5496.85	322.322	4.59
12105.00	91.110	338.100	6224.10	5391.04	4439.00	-3399.45	1719035.54	14527911.87	40°00'10.4259"N	80°43'9.3278"W	5591.15	322.555	4.57
12201.00	91.110	338.360	6222.24	5487.02	4528.14	-3435.05	1718999.96	14528000.97	40°00'11.3079"N	80°43'9.7817"W	5683.62	322.816	0.27
12298.00	91.050	338.170	6220.41	5584.00	4618.23	-3470.96	1718964.06	14528091.02	40°00'12.1993"N	80°43'10.2395"W	5777.16	323.072	0.21
12395.00	91.140	338.580	6218.56	5680.98	4708.38	-3506.70	1718928.33	14528181.15	40°00'13.0913"N	80°43'10.6951"W	5870.76	323.322	0.43
12491.00	90.520	337.950	6217.17	5776.97	4797.55	-3542.25	1718892.80	14528270.27	40°00'13.9736"N	80°43'11.1483"W	5963.55	323.560	0.92
12588.00	90.550	338.100	6216.26	5873.97	4887.50	-3578.55	1718856.52	14528360.19	40°00'14.8636"N	80°43'11.6111"W	6057.52	323.789	0.16
12684.00	90.920	337.710	6215.03	5969.96	4976.44	-3614.65	1718820.42	14528449.10	40°00'15.7437"N	80°43'12.0715"W	6150.66	324.007	0.56
12781.00	90.890	338.090	6213.50	6066.95	5066.30	-3651.14	1718783.95	14528538.92	40°00'16.6328"N	80°43'12.5368"W	6244.86	324.221	0.39
12877.00	90.710	338.120	6212.16	6162.94	5155.37	-3686.94	1718748.17	14528627.95	40°00'17.5141"N	80°43'12.9932"W	6338.08	324.429	0.19
12974.00	90.400	337.830	6211.22	6259.93	5245.28	-3723.31	1718711.81	14528717.83	40°00'18.4038"N	80°43'13.4570"W	6432.42	324.631	0.44
13070.00	90.460	337.740	6210.50	6355.93	5334.15	-3759.61	1718675.53	14528806.67	40°00'19.2832"N	80°43'13.9198"W	6525.94	324.823	0.11
13167.00	90.550	338.040	6209.64	6452.92	5424.02	-3796.11	1718639.03	14528896.50	40°00'20.1724"N	80°43'14.3853"W	6620.46	325.013	0.32
13263.00	90.770	338.080	6208.54	6548.92	5513.06	-3831.98	1718603.18	14528985.50	40°00'21.0534"N	80°43'14.8427"W	6714.01	325.198	0.23
13359.00	90.860	338.950	6207.17	6644.90	5602.38	-3867.14	1718568.04	14529074.79	40°00'21.9372"N	80°43'15.2908"W	6807.45	325.384	0.91
13456.00	90.650	337.970	6205.89	6741.89	5692.59	-3902.75	1718532.44	14529164.97	40°00'22.8299"N	80°43'15.7448"W	6901.96	325.566	1.03
13553.00	91.350	339.180	6204.20	6838.86	5782.88	-3938.17	1718497.03	14529255.22	40°00'23.7231"N	80°43'16.1965"W	6996.49	325.745	1.44
13649.00	90.650	338.050	6202.53	6934.84	5872.25	-3973.17	1718462.04	14529344.56	40°00'24.6074"N	80°43'16.6426"W	7090.09	325.918	1.38
13746.00	90.890	337.860	6201.22	7031.83	5962.15	-4009.58	1718425.65	14529434.42	40°00'25.4970"N	80°43'17.1068"W	7184.98	326.079	0.32
13842.00	91.450	339.910	6199.26	7127.79	6051.68	-4044.15	1718391.09	14529523.92	40°00'26.3828"N	80°43'17.5476"W	7278.60	326.246	2.21
13938.00	91.790	337.410	6196.55	7223.74	6141.06	-4079.07	1718356.19	14529613.25	40°00'27.2671"N	80°43'17.9927"W	7372.34	326.407	2.63
14035.00	90.460	338.290	6194.64	7320.72	6230.88	-4115.63	1718319.64	14529703.04	40°00'28.1559"N	80°43'18.4590"W	7467.41	326.554	1.64

Actual Wellpath Report

Serafin Ortiz MSH 1H awp Proj: 22222'

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REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	Serafin Ortiz MSH 1H
Field	Marshall	API	47051025080000
Facility	Serafin Ortiz MSH Pad	Wellbore	Serafin Ortiz MSH 1H AWB
Slot	1H		

WELLPATH DATA (235 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
14132.00	91.230	337.970	6193.21	7417.71	6320.89	-4151.76	1718283.53	14529793.01	40°00'29.0465"N	80°43'18.9197"W	7562.45	326.702	0.86
14228.00	91.170	339.300	6191.20	7513.67	6410.27	-4186.73	1718248.57	14529882.36	40°00'29.9309"N	80°43'19.3654"W	7656.38	326.850	1.39
14325.00	90.650	338.160	6189.66	7610.65	6500.65	-4221.91	1718213.41	14529972.70	40°00'30.8251"N	80°43'19.8139"W	7751.32	326.998	1.29
14422.00	91.390	342.170	6187.93	7707.54	6591.86	-4254.81	1718180.52	14530063.88	40°00'31.7275"N	80°43'20.2331"W	7845.76	327.159	4.20
14519.00	91.390	338.660	6185.58	7804.41	6683.20	-4287.31	1718148.03	14530155.19	40°00'32.6312"N	80°43'20.6471"W	7940.17	327.320	3.62
14615.00	90.520	338.240	6183.98	7900.39	6772.48	-4322.57	1718112.79	14530244.43	40°00'33.5145"N	80°43'21.0966"W	8034.37	327.452	1.01
14712.00	91.600	339.270	6182.19	7997.36	6862.87	-4357.71	1718077.66	14530334.78	40°00'34.4089"N	80°43'21.5446"W	8129.49	327.586	1.54
14809.00	91.420	338.340	6179.63	8094.31	6953.28	-4392.77	1718042.62	14530425.15	40°00'35.3034"N	80°43'21.9916"W	8224.62	327.717	0.98
14905.00	91.480	339.270	6177.20	8190.27	7042.75	-4427.46	1718007.93	14530514.60	40°00'36.1887"N	80°43'22.4339"W	8318.82	327.844	0.97
15002.00	90.180	338.180	6175.79	8287.25	7133.13	-4462.65	1717972.76	14530604.94	40°00'37.0829"N	80°43'22.8825"W	8414.08	327.969	1.75
15098.00	90.490	339.020	6175.23	8383.24	7222.51	-4497.68	1717937.74	14530694.28	40°00'37.9672"N	80°43'23.3291"W	8508.45	328.088	0.93
15195.00	90.090	337.180	6174.74	8480.23	7312.50	-4533.86	1717901.58	14530784.24	40°00'38.8577"N	80°43'23.7905"W	8603.99	328.200	1.94
15291.00	90.830	339.020	6173.97	8576.22	7401.57	-4569.66	1717865.79	14530873.27	40°00'39.7389"N	80°43'24.2470"W	8698.57	328.309	2.07
15388.00	91.110	338.670	6172.33	8673.20	7492.02	-4604.66	1717830.80	14530963.68	40°00'40.6339"N	80°43'24.6933"W	8793.93	328.425	0.46
15484.00	90.770	335.100	6170.75	8769.15	7580.28	-4642.34	1717793.14	14531051.92	40°00'41.5073"N	80°43'25.1740"W	8888.87	328.516	3.74
15581.00	91.350	338.180	6168.96	8866.10	7669.31	-4680.79	1717754.70	14531140.90	40°00'42.3882"N	80°43'25.6646"W	8984.88	328.603	3.23
15677.00	91.970	338.150	6166.18	8962.06	7758.38	-4716.48	1717719.03	14531229.94	40°00'43.2696"N	80°43'26.1197"W	9079.52	328.704	0.65
15774.00	91.600	338.150	6163.16	9059.01	7848.37	-4752.57	1717682.96	14531319.90	40°00'44.1599"N	80°43'26.5799"W	9175.17	328.803	0.38
15870.00	91.910	338.310	6160.22	9154.96	7937.48	-4788.15	1717647.38	14531408.97	40°00'45.0417"N	80°43'27.0337"W	9269.84	328.900	0.36
15967.00	91.630	336.910	6157.22	9251.91	8027.12	-4825.08	1717610.47	14531498.58	40°00'45.9287"N	80°43'27.5047"W	9365.69	328.990	1.47
16063.00	91.720	336.850	6154.41	9347.86	8115.38	-4862.76	1717572.81	14531586.80	40°00'46.8019"N	80°43'27.9855"W	9460.75	329.070	0.11
16160.00	91.790	338.050	6151.44	9444.80	8204.92	-4899.94	1717535.64	14531676.30	40°00'47.6879"N	80°43'28.4598"W	9556.68	329.155	1.24
16256.00	91.820	337.980	6148.42	9540.76	8293.89	-4935.86	1717499.73	14531765.24	40°00'48.5683"N	80°43'28.9179"W	9651.50	329.242	0.08
16353.00	91.380	338.320	6145.71	9637.72	8383.89	-4971.95	1717463.66	14531855.20	40°00'49.4588"N	80°43'29.3781"W	9747.30	329.331	0.57
16449.00	91.450	338.020	6143.34	9733.69	8472.98	-5007.64	1717427.99	14531944.25	40°00'50.3403"N	80°43'29.8332"W	9842.14	329.416	0.32
16546.00	91.480	338.330	6140.86	9830.65	8562.99	-5043.69	1717391.95	14532034.24	40°00'51.2309"N	80°43'30.2930"W	9937.99	329.501	0.32
16642.00	91.380	338.440	6138.46	9926.62	8652.22	-5079.04	1717356.61	14532123.42	40°00'52.1137"N	80°43'30.7438"W	10032.82	329.586	0.15
16739.00	91.510	338.490	6136.02	10023.59	8742.42	-5114.63	1717321.03	14532213.59	40°00'53.0062"N	80°43'31.1977"W	10128.64	329.671	0.14
16836.00	91.420	337.770	6133.54	10120.55	8832.40	-5150.75	1717284.93	14532303.54	40°00'53.8966"N	80°43'31.6584"W	10224.56	329.751	0.75
16932.00	91.200	338.240	6131.34	10216.53	8921.39	-5186.70	1717249.00	14532392.50	40°00'54.7771"N	80°43'32.1168"W	10319.55	329.827	0.54

REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Serafin Ortiz MSH 1H
Field	Marshall	API	47051025080000
Facility	Serafin Ortiz MSH Pad	Wellbore	Serafin Ortiz MSH 1H AWB
Slot	1H		

WELLPATH DATA (235 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
17029.00	91.230	337.780	6129.29	10313.51	9011.32	-5223.01	1717212.70	14532482.38	40°00'55.6668"N	80°43'32.5800"W	10415.55	329.903	0.48
17126.00	91.420	337.780	6127.04	10410.48	9101.09	-5259.68	1717176.04	14532572.12	40°00'56.5551"N	80°43'33.0478"W	10511.62	329.976	0.20
17222.00	90.890	338.130	6125.11	10506.46	9190.05	-5295.71	1717140.03	14532661.05	40°00'57.4354"N	80°43'33.5073"W	10606.68	330.048	0.66
17319.00	91.050	338.300	6123.47	10603.44	9280.11	-5331.70	1717104.05	14532751.07	40°00'58.3264"N	80°43'33.9663"W	10702.69	330.121	0.24
17415.00	91.750	338.810	6121.12	10699.41	9369.44	-5366.79	1717068.98	14532840.36	40°00'59.2103"N	80°43'34.4138"W	10797.63	330.196	0.90
17512.00	90.920	336.010	6118.86	10796.37	9458.96	-5404.04	1717031.74	14532929.85	40°01'0.0961"N	80°43'34.8890"W	10893.83	330.260	3.01
17608.00	90.830	338.140	6117.40	10892.34	9547.36	-5441.43	1716994.37	14533018.22	40°01'0.9708"N	80°43'35.3660"W	10989.14	330.319	2.22
17705.00	90.800	338.130	6116.02	10989.33	9637.38	-5477.55	1716958.26	14533108.20	40°01'1.8615"N	80°43'35.8267"W	11085.24	330.388	0.03
17801.00	90.520	337.810	6114.91	11085.32	9726.36	-5513.55	1716922.27	14533197.15	40°01'2.7419"N	80°43'36.2860"W	11180.40	330.453	0.44
17898.00	90.740	338.370	6113.84	11182.32	9816.35	-5549.75	1716886.09	14533287.10	40°01'3.6323"N	80°43'36.7476"W	11276.54	330.518	0.62
17994.00	90.770	334.810	6112.58	11278.27	9904.42	-5587.88	1716847.97	14533375.14	40°01'4.5038"N	80°43'37.2343"W	11371.98	330.569	3.71
18090.00	90.220	335.640	6111.75	11374.16	9991.58	-5628.11	1716807.76	14533462.27	40°01'5.3664"N	80°43'37.7479"W	11467.67	330.608	1.04
18187.00	90.520	338.410	6111.12	11471.13	10080.88	-5665.96	1716769.92	14533551.52	40°01'6.2500"N	80°43'38.2309"W	11564.05	330.662	2.87
18283.00	91.290	339.610	6109.61	11567.10	10170.50	-5700.35	1716735.55	14533641.11	40°01'7.1366"N	80°43'38.6693"W	11659.03	330.730	1.49
18476.00	91.450	338.430	6104.99	11760.01	10350.65	-5769.43	1716666.50	14533821.18	40°01'8.9190"N	80°43'39.5502"W	11849.99	330.865	0.62
18573.00	91.260	339.310	6102.70	11856.97	10441.10	-5804.38	1716631.55	14533911.60	40°01'9.8139"N	80°43'39.9959"W	11946.02	330.930	0.93
18669.00	90.550	338.330	6101.18	11952.94	10530.60	-5839.06	1716596.89	14534001.07	40°01'10.6995"N	80°43'40.4382"W	12041.11	330.992	1.26
18766.00	90.430	338.290	6100.35	12049.93	10620.73	-5874.91	1716561.05	14534091.16	40°01'11.5912"N	80°43'40.8954"W	12137.32	331.051	0.13
18862.00	90.580	339.050	6099.51	12145.92	10710.15	-5909.83	1716526.15	14534180.55	40°01'12.4759"N	80°43'41.3407"W	12232.47	331.110	0.81
18959.00	90.220	338.070	6098.83	12242.91	10800.43	-5945.28	1716490.71	14534270.79	40°01'13.3692"N	80°43'41.7929"W	12328.66	331.169	1.08
19055.00	90.220	338.120	6098.46	12338.91	10889.50	-5981.10	1716454.91	14534359.83	40°01'14.2505"N	80°43'42.2497"W	12423.96	331.222	0.05
19151.00	90.370	338.400	6097.96	12434.91	10978.67	-6016.66	1716419.37	14534448.96	40°01'15.1328"N	80°43'42.7033"W	12519.24	331.276	0.33
19247.00	90.340	337.970	6097.37	12530.91	11067.80	-6052.33	1716383.71	14534538.05	40°01'16.0146"N	80°43'43.1583"W	12614.55	331.328	0.45
19344.00	90.460	338.170	6096.69	12627.90	11157.77	-6088.56	1716347.49	14534628.00	40°01'16.9049"N	80°43'43.6204"W	12710.88	331.380	0.24
19440.00	90.400	338.280	6095.97	12723.90	11246.92	-6124.17	1716311.90	14534717.11	40°01'17.7869"N	80°43'44.0747"W	12806.20	331.431	0.13
19536.00	90.520	338.610	6095.20	12819.89	11336.21	-6159.44	1716276.64	14534806.36	40°01'18.6703"N	80°43'44.5245"W	12901.48	331.483	0.37
19633.00	90.370	337.730	6094.45	12916.89	11426.25	-6195.50	1716240.59	14534896.36	40°01'19.5612"N	80°43'44.9846"W	12997.82	331.533	0.92
19729.00	90.550	338.210	6093.68	13012.88	11515.23	-6231.51	1716204.59	14534985.31	40°01'20.4417"N	80°43'45.4439"W	13093.22	331.580	0.53
19826.00	90.650	338.570	6092.66	13109.88	11605.41	-6267.23	1716168.89	14535075.45	40°01'21.3339"N	80°43'45.8996"W	13189.53	331.630	0.39
19922.00	90.650	338.310	6091.57	13205.86	11694.69	-6302.51	1716133.63	14535164.70	40°01'22.2172"N	80°43'46.3495"W	13284.85	331.679	0.27

Actual Wellpath Report

Serafin Ortiz MSH 1H awp Proj: 22222'

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REFERENCE WELLPATH IDENTIFICATION			
Operator	SWN PRODUCTION COMPANY, LLC	Well	Serafin Ortiz MSH 1H
Field	Marshall	API	47051025080000
Facility	Serafin Ortiz MSH Pad	Wellbore	Serafin Ortiz MSH 1H AWB
Slot	1H		

WELLPATH DATA (235 stations) † = interpolated, ‡ = extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS [°/100ft]
20018.00	90.620	338.160	6090.51	13301.86	11783.84	-6338.10	1716098.05	14535253.81	40°01'23.0993"N	80°43'46.8036"W	13380.23	331.726	0.16
20115.00	90.520	338.220	6089.54	13398.85	11873.89	-6374.14	1716062.02	14535343.83	40°01'23.9903"N	80°43'47.2633"W	13476.61	331.772	0.12
20211.00	90.620	337.950	6088.59	13494.85	11962.95	-6409.97	1716026.21	14535432.85	40°01'24.8715"N	80°43'47.7203"W	13572.03	331.817	0.30
20308.00	90.800	338.720	6087.39	13591.84	12053.09	-6445.78	1715990.42	14535522.96	40°01'25.7633"N	80°43'48.1771"W	13668.39	331.863	0.82
20404.00	90.550	337.850	6086.26	13687.83	12142.27	-6481.29	1715954.91	14535612.10	40°01'26.6457"N	80°43'48.6302"W	13763.79	331.908	0.94
20501.00	90.650	338.130	6085.24	13784.82	12232.20	-6517.64	1715918.58	14535701.99	40°01'27.5354"N	80°43'49.0939"W	13860.24	331.950	0.31
20597.00	90.620	338.000	6084.18	13880.81	12321.24	-6553.50	1715882.73	14535791.00	40°01'28.4165"N	80°43'49.5514"W	13955.69	331.992	0.14
20694.00	90.550	337.430	6083.19	13977.81	12410.99	-6590.28	1715845.96	14535880.72	40°01'29.3045"N	80°43'50.0207"W	14052.21	332.032	0.59
20790.00	90.710	337.130	6082.13	14073.80	12499.54	-6627.36	1715808.90	14535969.23	40°01'30.1806"N	80°43'50.4938"W	14147.80	332.067	0.35
20887.00	90.680	337.340	6080.95	14170.78	12588.97	-6664.89	1715771.39	14536058.63	40°01'31.0656"N	80°43'50.9728"W	14244.40	332.102	0.22
20983.00	90.620	337.170	6079.86	14266.77	12677.50	-6702.01	1715734.29	14536147.12	40°01'31.9416"N	80°43'51.4464"W	14340.01	332.137	0.19
21080.00	90.740	337.360	6078.71	14363.76	12766.96	-6739.49	1715696.82	14536236.54	40°01'32.8267"N	80°43'51.9248"W	14436.62	332.171	0.23
21176.00	90.550	337.060	6077.63	14459.74	12855.46	-6776.67	1715659.65	14536325.01	40°01'33.7024"N	80°43'52.3994"W	14532.24	332.204	0.37
21273.00	90.620	337.190	6076.64	14556.73	12944.83	-6814.38	1715621.96	14536414.34	40°01'34.5867"N	80°43'52.8806"W	14628.88	332.237	0.15
21370.00	90.580	337.240	6075.63	14653.71	13034.25	-6851.94	1715584.41	14536503.73	40°01'35.4715"N	80°43'53.3600"W	14725.51	332.270	0.07
21466.00	90.620	337.170	6074.62	14749.70	13122.75	-6889.13	1715547.23	14536592.19	40°01'36.3472"N	80°43'53.8346"W	14821.16	332.302	0.08
21563.00	90.650	336.990	6073.55	14846.68	13212.08	-6926.91	1715509.47	14536681.49	40°01'37.2311"N	80°43'54.3167"W	14917.82	332.333	0.19
21659.00	90.680	337.400	6072.43	14942.67	13300.57	-6964.11	1715472.28	14536769.95	40°01'38.1067"N	80°43'54.7916"W	15013.47	332.364	0.43
21756.00	90.520	337.460	6071.42	15039.66	13390.14	-7001.34	1715435.07	14536859.48	40°01'38.9929"N	80°43'55.2667"W	15110.08	332.396	0.18
21853.00	90.580	337.040	6070.49	15136.65	13479.59	-7038.85	1715397.58	14536948.89	40°01'39.8780"N	80°43'55.7454"W	15206.73	332.427	0.44
21949.00	90.550	337.220	6069.54	15232.64	13568.04	-7076.16	1715360.28	14537037.31	40°01'40.7532"N	80°43'56.2216"W	15302.41	332.457	0.19
22046.00	90.650	337.210	6068.52	15329.62	13657.46	-7113.72	1715322.73	14537126.70	40°01'41.6380"N	80°43'56.7010"W	15399.07	332.486	0.10
22143.00	90.680	337.360	6067.40	15426.61	13746.93	-7151.18	1715285.29	14537216.13	40°01'42.5233"N	80°43'57.1790"W	15495.73	332.516	0.16
22195.00	90.650	337.280	6066.79	15478.60	13794.91	-7171.22	1715265.25	14537264.09	40°01'42.9980"N	80°43'57.4349"W	15547.54	332.533	0.16
22222.00‡	90.650	337.280	6066.49	15505.60	13819.81	-7181.65	1715254.83	14537288.98	40°01'43.2444"N	80°43'57.5679"W	15574.45	332.541	0.00

REFERENCE WELLPATH IDENTIFICATION

Operator	SWN PRODUCTION COMPANY, LLC	Well	Serafin Ortiz MSH 1H
Field	Marshall	API	47051025080000
Facility	Serafin Ortiz MSH Pad	Wellbore	Serafin Ortiz MSH 1H AWB
Slot	1H		

HOLE & CASING SECTIONS - Ref Wellbore: Serafin Ortiz MSH 1H AWB Ref Wellpath: Serafin Ortiz MSH 1H awp Proj: 22222'

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
13.375in Casing	26.00	826.00	800.00	26.00	826.00	0.00	0.00	-1.69	-0.94
9.625in Casing	26.00	2425.00	2399.00	26.00	2410.00	0.00	0.00	-102.92	-114.59
5.5in Casing	26.00	22222.00	22196.00	26.00	6066.49	0.00	0.00	13819.81	-7181.65

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Serafin Ortiz MSH 1H BHL rev 1	6055.00	13819.80	-7182.84	1715253.64	14537288.97	40°01'43.2443"N	80°43'57.5832"W	point
Serafin Ortiz MSH 1H LP rev 3	6280.00	-338.73	-1442.34	1720991.88	14523136.02	39°59'23.1493"N	80°42'44.3768"W	point

WELLPATH COMPOSITION - Ref Wellbore: Serafin Ortiz MSH 1H AWB Ref Wellpath: Serafin Ortiz MSH 1H awp Proj: 22222'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	Survey Date
26.00	770.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	1 Total MWD 17.5' IFR-MSA 177' - 770'	Serafin Ortiz MSH 1H AWB	5/5/2024
770.00	2339.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	2 Total MWD 12.25' IFR-MSA 875' - 2339'	Serafin Ortiz MSH 1H AWB	5/5/2024
2339.00	5446.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	3 Total MWD 8.75" IFR-MSA 2443' - 5446'	Serafin Ortiz MSH 1H AWB	5/5/2024
5446.00	22222.00	OWSG MWD rev2 + IFR1 + Multi-Station Correction	4 BH MWD 8.5" IFR-MSA 5548' - 22195'	Serafin Ortiz MSH 1H AWB	5/5/2024



SWN PRODUCTION COMPANY, LLC



Location: Marshall County, WV

Field: Marshall

Facility: Serafin Ortiz MSH Pad

Slot: 1H

Well: Serafin Ortiz MSH 1H

Wellbore: Serafin Ortiz MSH 1H AWB

Plot reference wellpath is Serafin Ortiz MSH 1H awp Proj: 22222'

True vertical depths are referenced to SDC 40 (KB)

Reference wellpath measured depths are referenced to SDC 40 (KB)

SDC 40 (KB) to Mean Sea Level: 1305.18 feet

Mean Sea Level to Ground level (At Slot: 1H): -1279.18 feet

Offset wellpath MDs are referenced to each path's default MD datum

Grid System: NAD83 / UTM Zone 17 North, US feet

North Reference: Grid north

Scale: True distance

Coordinates are in feet referenced to Slot

Depths are in feet

Created by: tranlam on 2024-05-13; Database: WA_MPL_EASTERNUS_Defn

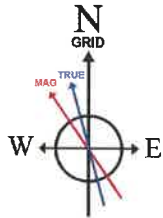
Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Serafin Ortiz MSH Pad			1722432.730	14523474.530	39°59'28.4495"N	80°42'25.8437"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
1H	0.09	0.92	1722433.650	14523474.620	39°59'28.4504"N	80°42'25.8319"W
SDC 40 (KB) to Ground level (At Slot: 1H)					26ft	
Mean Sea Level to Ground level (At Slot: 1H)					-1279.18ft	
SDC 40 (KB) to Mean Sea Level					1305.18ft	

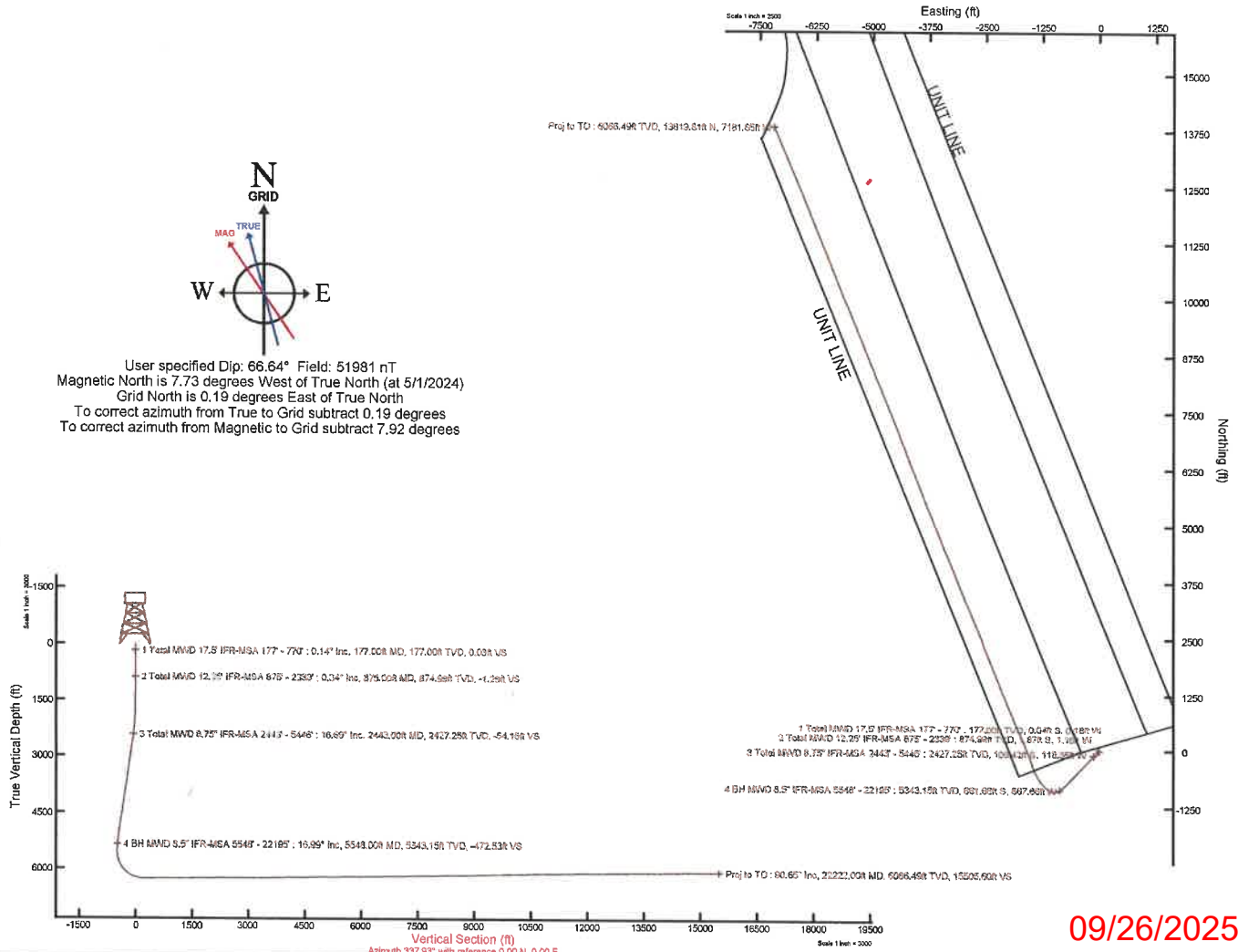
Bottom Hole Location

MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
22222.00	90.650	337.280	6066.49	13819.81	-7181.65	1715254.83	14537288.98	40°01'43.2444"N	80°43'57.5679"W

API: 47051025080000
BH JOB: 112170279
DURATION: 05.08.2024 to 05.11.2024
RIG: SDC 40



User specified Dip: 66.64° Field: 51981 nT
Magnetic North is 7.73 degrees West of True North (at 5/1/2024)
Grid North is 0.19 degrees East of True North
To correct azimuth from True to Grid subtract 0.19 degrees
To correct azimuth from Magnetic to Grid subtract 7.92 degrees



09/26/2025